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**2015 Outlook of the U.S. and World Sugar Markets, 2014-2024**

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**ABSTRACT**

This report evaluates the U.S. and world sugar markets for 2014-2024 using the Global Sugar Policy Simulation Model. This analysis is based on assumptions that general economic conditions, agricultural policies, population growth, weather conditions, and technological changes remain at the long-run conditions.

Both the U.S. and world sugar economies are predicted to improve over the next ten years. World sugar prices increased from 18.7 cents/lb in 2009 to 27.0 cents/lb in 2010 and 32.0 cents/lb in 2011 before falling to 18.0 cents/lb in 2013 and 16.8 cents/lb in 2014. World sugar production declined 1.5% in 2014 while consumption increased by 2.2%. World demand for sugar is expected to be strong during the next few years, resulting in world sugar prices recovering from the lows in 2014 and 2015. Sugar prices are expected to increase to 22 cents/lb by 2024. The U.S. wholesale price of sugar is projected to increase from a low 31 cents/lb in 2014 to near 36 cents/lb by 2024. It is projected that Mexican exports to the United States will increase from 1.60 million metric tons in 2014 to 1.84 million metric tons in 2024. World trade volumes of sugar are expected to increase throughout the forecast period.

**Keywords:** sugar, production, exports, consumption, ending stocks

## HIGHLIGHTS

Total world sugar trade is projected to increase by 8.3% from 45.8 million metric tons to 49.6 million metric tons between 2014 and 2024. World sugar prices are projected to increase from \$0.18/lb in 2015 to \$0.22/lb in 2024. U.S. wholesale sugar price is projected to increase from \$0.31/lb in 2015 to \$0.36/lb in 2024.

U.S. sugar imports are not expected to increase over the 2014-2024 period compared to the recent average import. U.S. sugar production is projected to increase by 12.5% between 2014 and 2024. U.S. sugar consumption is projected to increase by 12.2% and ending stocks are predicted to increase by 14.8%. However, the U.S. sugar industry could face some uncertainty, mainly because of recent increases in sugar imports from Mexico and possible imports from the Trans-Pacific-Partners if the United States reaches an agreement with those countries.

Brazil's production is expected to increase by 12.3% from the 2012-2014 average of 37.4 million metric tons to 42.0 million metric tons in 2024. Exports could increase by 10.4% to 29.0 million metric tons in 2024, while consumption increases by 14.5%.

Canada's production is predicted to increase between 2014 and 2024. Canada's imports are expected to increase by 9.7%. Consumption is predicted to increase by 10.2% and ending stocks are predicted to increase by 4.1%.

Mexico's production is expected to increase by 3.8%, and exports are expected to increase by 3.4% from the 2012-2014 average due to increases in its exports to the United States.

The European Union (EU) is expected to remain as an importer due to the EU-28 sugar policy reform. Their production is predicted to increase by 4.2%, while consumption will increase by 2.8%.

Exporting countries, such as Australia, Thailand, South Africa, Cuba, Mexico and Brazil are predicted to increase their production and exports during the forecasting period.

Most importing countries, except for China and FSU, are predicted to increase their imports for the 2014-2024 period.



## **2015 Outlook of the U.S. and World Sugar Markets, 2014-2024**

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### **INTRODUCTION**

Sugar is produced in over 100 countries worldwide. In most years, over 70% of world sugar production is consumed domestically and the remaining is traded in the world. However, a significant share of this trade volume takes place under bilateral long-term agreements or on preferential terms. Since only a small proportion of world production is traded freely, small changes in production and government policies tend to have large effects on world sugar markets. As a result, sugar prices have been unstable in the world market.

During late 2005 and the first quarter of 2006, world sugar price increased from about \$0.12/lb to over \$0.18/lb because of increased use of sugarcane for ethanol production in Brazil. World sugar price fell to \$0.12/lb in late 2006 and \$0.11/lb by early 2007 due to increased production in other exporting nations. The yearly average price was \$0.19/lb in 2009 and increased to \$0.27/lb in 2010 and increased further to \$0.32/lb in 2011. The stocks to use ratio has varied between 34% in 1968 and 17% in 2010. The ICE (Intercontinental Exchange) No. 11 price follows an opposite relationship with the stocks to use ratio. When the stocks to use ratio is high (low), ICE prices are low (high). A decrease in the stocks to use ratio increased sugar price from \$0.08/lb in 2000 to \$0.27/lb in 2010. Similar price increases occurred in 1974-1975 and 1980-1981. However, the current stocks to use ratio of 13.9% which has increased since 2010, lowered the price of sugar. In 2013, the ICE No. 11 sugar price dropped to \$18.0/lb. By 2014, the price dropped to \$16.8/lb.

This report evaluates the U.S. and world sugar industry for 2014-2024 using the Global Sugar Policy Simulation Model developed by Benirschka et al. (1996). This model was updated on the basis of 2014 data. The outlook projection is based on an assumption that farm and trade policies adopted by sugar exporting and importing countries remain unchanged over the 2014-2024 period.

Sugarcane is a perennial grass that is produced in tropical and subtropical climate zones. It matures in 12 to 16 months. Once the cane is harvested, the sucrose starts breaking down. Thus, sugarcane mills are located close to the cane fields to minimize transport costs and sucrose losses. Mills convert sugarcane into raw sugar which is shipped to refineries for further processing. In contrast to raw sugar producing mills, refineries are unconstrained by seasonal production patterns and operate throughout the year. Unlike sugarcane, sugarbeets are an annual crop of temperate climate zones. Because of disease problems, sugarbeets are always grown in crop rotations. Since sugarbeets are bulky and costly to transport, beet processing facilities are located close to production. In contrast to sugarcane, sugarbeets are directly processed into refined sugar. Raw sugar is produced only from sugarcane.

Raw sugar and refined sugar are two different products. They are both traded internationally. Beet sugar producing countries export refined sugar, while cane sugar producing countries export either raw or refined sugar. In recent years, the share of raw sugar in total sugar exports has been about 60%.

## OVERVIEW OF THE WORLD SUGAR INDUSTRY AND SUGAR POLICIES

For the 2010-2014 period, annual global sugar production was approximately 172 million metric tons with about 32% of production exported from exporting countries. The largest sugar producing region is Brazil, followed by the India and the EU (Table 1).

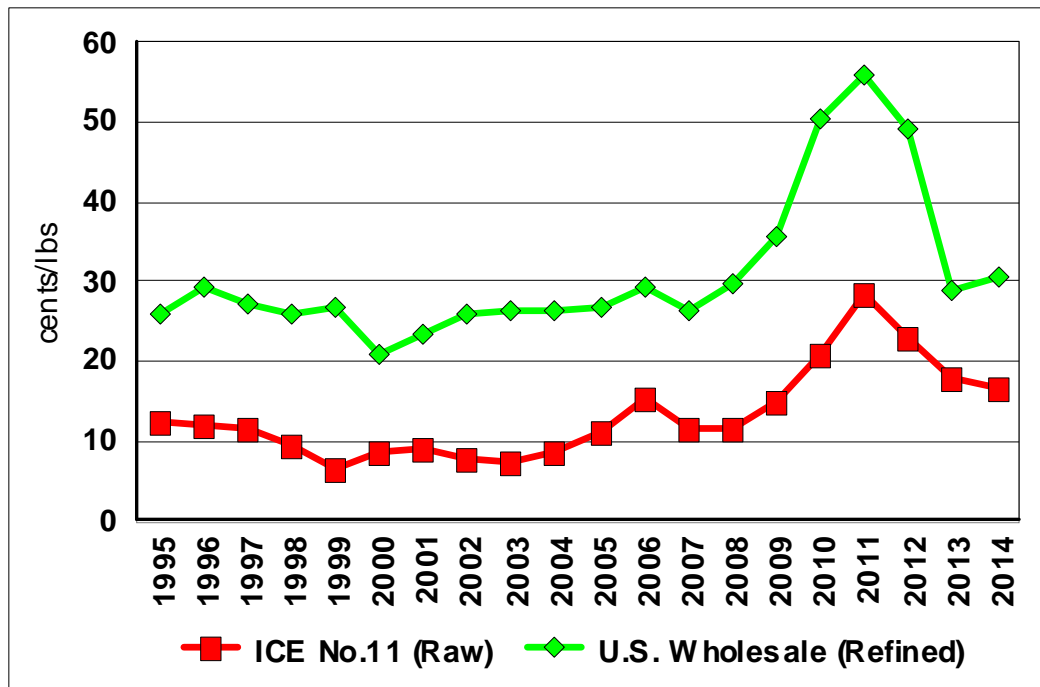
**Table 1. World Sugar Supply and Utilization, 2010 to 2014 Average**

Country/ Region	Beet/ Cane	Consumption	Production	Net Exports	Ending Stocks	Per Capita Consumption
-----1,000 metric tons, raw value-----						Kg
Algeria	-	1,244	0	(1,252)	83	32
Australia	C	1,225	4,127	2,815	92	57
Brazil	C	11,549	37,340	25,970	(259)	57
Canada	B	1,186	110	(1,092)	256	34
China	B/C	15,440	13,021	(3,433)	5,975	11
Cuba	C	676	1,462	780	128	58
European Union	B	18,258	16,423	(1,966)	3,141	50
Egypt	B/C	2,854	1,975	(808)	194	35
Former Soviet Union	B/C	9,117	7,068	(2,677)	1,479	31
India	C	25,046	27,277	1,922	7,724	19
Indonesia	C	5,410	2,140	(3,513)	1,084	22
Japan	B/C	2,083	742	(1,343)	548	16
Korea	-	1,420	0	(1,435)	485	29
Mexico	C	4,695	6,226	1,530	1,048	39
South Africa	C	1,825	2,107	245	243	40
Thailand	C	2,547	10,291	7,443	3,621	37
Columbia	C	1,706	2,220	549	252	39
Guatemala	C	760	2,605	1,795	377	54
Pakistan	C	4,380	4,648	288	1,092	23
United States	B/C	10,642	7,660	(3,000)	1,772	34
Rest of World	B/C	37,312	21,792	19,925	9,217	19
World	B/C	164,473	171,962	55,801	36,314	21

Source: USDA-FAS, PS&D website.

Per capita sugar consumption was highest in Cuba followed by Brazil and Australia. Brazil converts a substantial portion of sugar cane into ethanol. Per capita sugar consumption in the United States was 34 kg, which is above world average per capita consumption (21 kg). Per capita sugar consumption was lowest in China at 11 kg per capita, but that may increase substantially as per capita income increases. Annual global sugar consumption for the 2010-2014 period was 164 million metric tons.

The major sugar exporting countries were Brazil, Thailand, Australia, and Guatemala. These countries accounted for 68% of global exports from 2010 to 2014. Some years India exports sugar. Relatively few countries dominate world sugar exports, but imports are less concentrated. Major importing countries were Indonesia, United States, China, Former Soviet Union (FSU), EU, Korea, Japan, Algeria, and Canada. Imports by these countries accounted for about 35% of all sugar imports from 2010 to 2014.

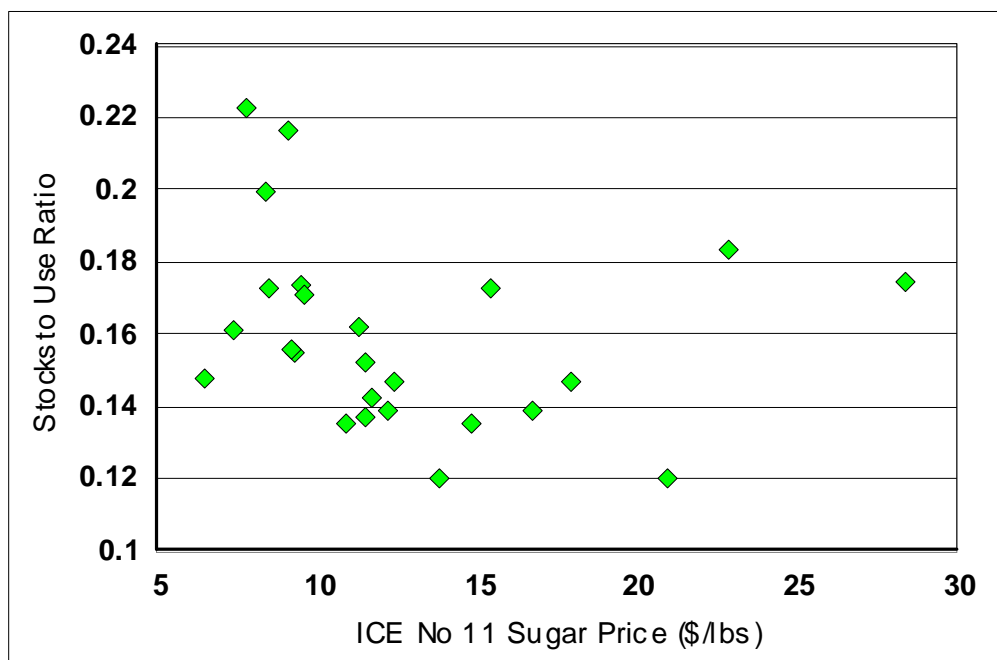


**Figure 1. U.S. and World Sugar Prices (Nominal)**

The ICE No.11 raw sugar price is usually considered to be the world market price for sugar. Except for years with high world market prices, there was a substantial wedge between the U.S. wholesale price of sugar and the world market price. Over the last decade, U.S. wholesale prices fluctuated between \$0.22/lb and \$0.56/lb. World market prices ranged between \$0.11/lb and \$0.28/lb (Figure 1). Figure 1 shows the dramatic increase in world sugar price in late 2008 and 2009. In 2003, the price averaged \$0.07/lb, but it had risen to \$0.12/lb in 2005 and it was \$0.18/lb in June 2006 before falling to \$0.11/lb in 2007. World sugar price increased to \$0.16/lb in 2009, \$0.22 in 2010 and \$0.28 in 2011. The high world sugar price also increased the U.S. wholesale price to \$0.30/lb in 2006, falling to \$0.26/lb in 2007, before increasing to \$0.28/lb in 2008, \$0.34 in 2009 and \$0.50 in 2010. U.S. wholesale prices peaked in 2011 at \$0.56/lb before falling to \$0.29/lb in 2013. However, in 2014 U.S. wholesale prices for refined beet sugar increased slightly to \$0.31/lb.

Figure 2 shows the relationship between world stocks to use ratio and the world raw sugar price. The correlation between the two series is -0.52 indicating that there is a strong negative correlation between them. The stocks to use ratio has fallen from 31% in 2000 to 17% in 2010. That decrease increased sugar price from \$0.08/lb in 2000 to \$0.33/lb in 2011. However, that ratio increased to 23% in 2012 which explains the current decrease in sugar prices. Predicted carry-over stocks for 2014 are higher than in 2013, which will relieve some of the pressure on prices in the near term. World stocks reached a peak in 2013 before falling 4% in 2014.

The volatility of world sugar prices could be due to the nature of supply response to price changes stemming from high fixed costs of sugar production. An increase in sugar production in response to rising sugar prices requires significant investments in processing facilities, and it takes some time until new production capacity becomes available. Once the facilities are in place, they tend to be used at full capacity to spread the fixed costs. Thus, when prices fall, production remains at full capacity. Sugar production is relatively unresponsive to price in the short run;

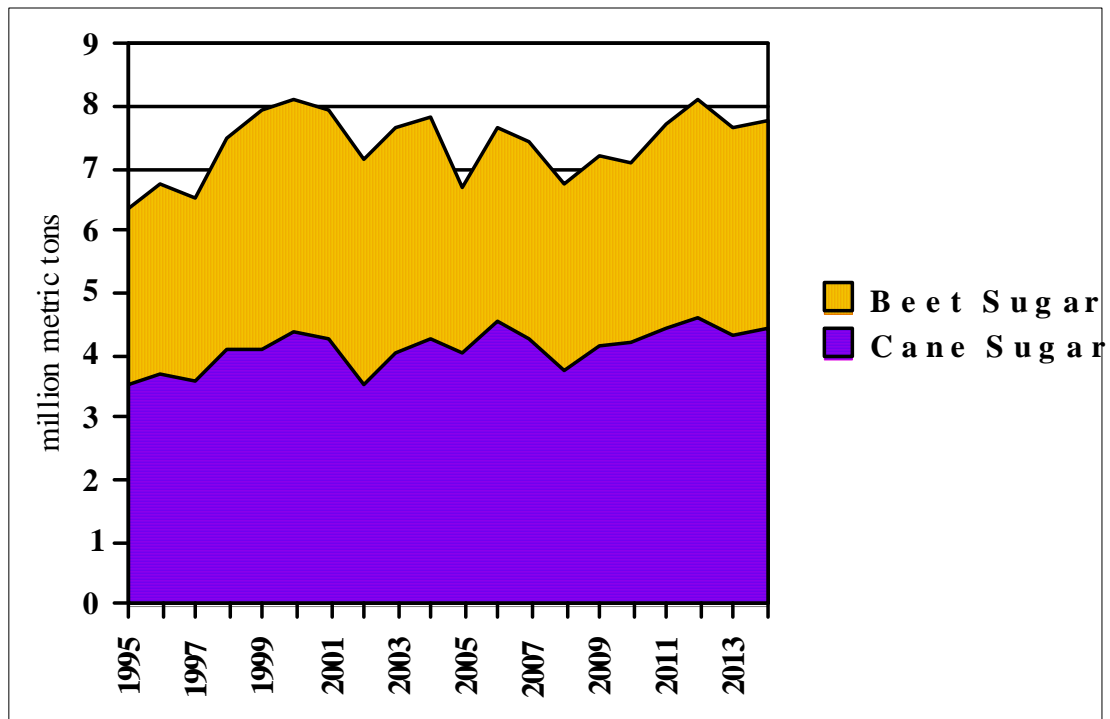


**Figure 2. World Stocks to Use Ratio and ICE No. 11 Raw Sugar Prices, 1967-2014**

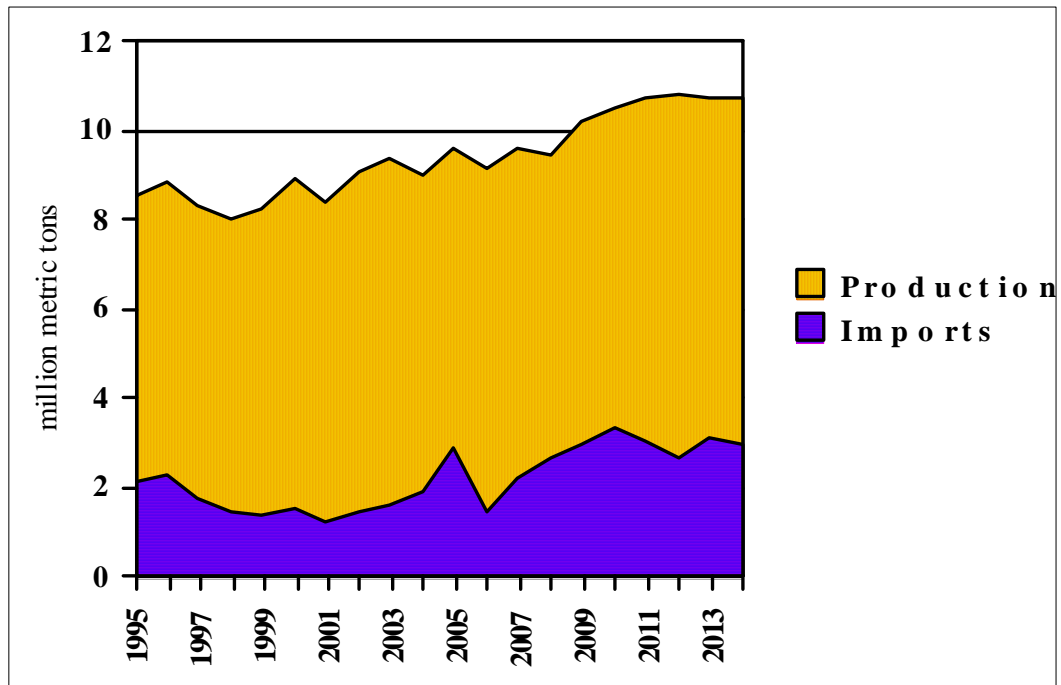
however sugar price does respond to changes in consumption. The increase in the world price of sugar in 2005 and 2006 is mainly because Brazil increased the production of ethanol from sugar cane. However, the price dropped in 2007 because of increased production of sugar from sugarcane in response to higher sugar prices in 2005 and 2006.

The United States produces both beet and cane sugar. Cane sugar is produced mainly in Florida, Louisiana, and Texas. Beet sugar is produced largely in the Great Lakes region, Upper Midwest, Great Plains, and far western states. Both cane sugar production increased by 19% and beet sugar increased 23% between 1995 and 2013 (Figure 3). U.S. total sugar production increased about 41% from 5.5 million metric tons in 1995 to 7.8 million metric tons in 2014 (Figure 4).

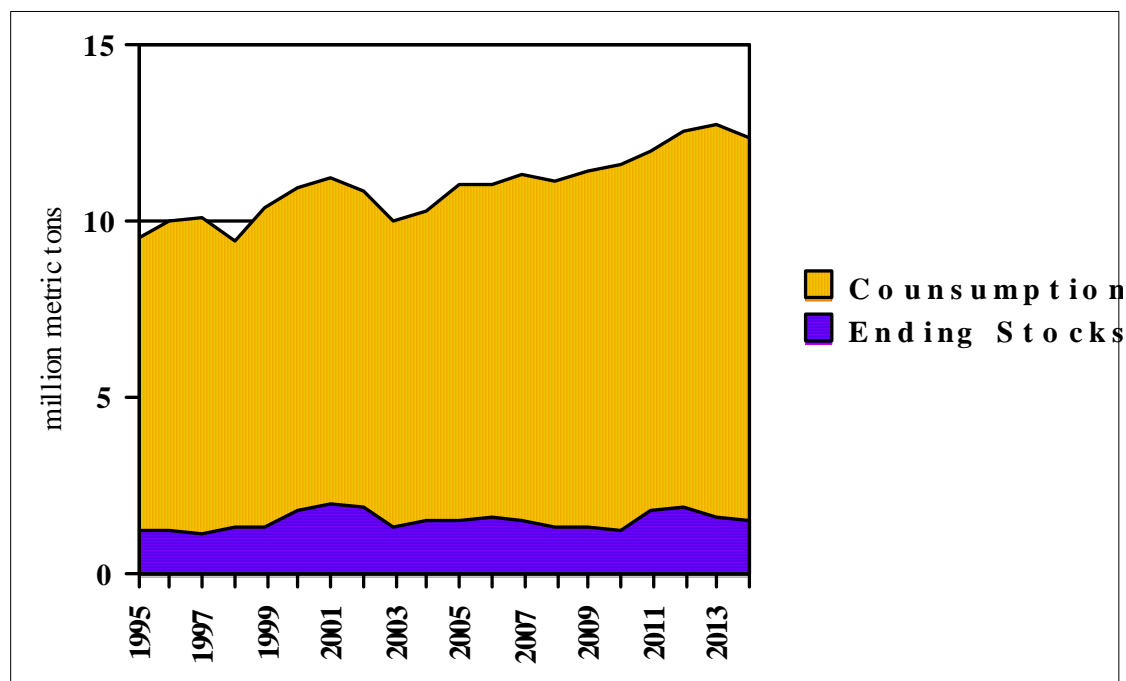
U.S. consumption of sugar increased by 29.8% from about 8.4 million metric tons in 1995 to 10.9 million metric tons in 2014 (Figure 5). The balance was imported from more than 40 countries. U.S. sugar imports decreased 71% from 4.5 million metric tons in 1974 to 1.3 million metric tons in 1987 and then increased to an average of 2.2 million metric tons during the 1995 to 2014 period. Under the North American Free Trade Agreement (NAFTA), Mexico currently is allowed to export unlimited quantities of sugar to the United States. Mexico exported 732 thousand metric tons of sugar into the United States in 2009 and 1,549 thousand metric tons of sugar into the United States in 2010, 972 thousand metric tons in 2011, 1,927 thousand metric tons in 2012, 1,932 thousand metric tons in 2013 and 1,453 thousand metric tons in 2014. The U.S.-Central American Free Trade Agreement (CAFTA), which is a free trade agreement (FTA) currently with six Central American countries, provides additional sugar imports of 110,000 metric tons, with additional increases of 3,000 metric tons per year.



**Figure 3. U.S. Beet and Cane Sugar Production**



**Figure 4. U.S. Sugar Production and Imports**



**Figure 5. U.S. Sugar Consumption and Ending Stocks**

### **U.S. Sugar Programs and Policies**

The U.S. sugar program was established by the Food and Agricultural Act of 1981. Several modifications were made by the Food Security Act of 1985; the Food, Agriculture, Conservation, and Trade Act of 1990; the Federal Agriculture Improvement and Reform Act of 1996; the Farm Security and Rural Investment (FSRI) Act of 2002; the Food, Conservation, and Energy Act of 2008; and the Agricultural Act of 2014.

The core policy tools in the program are the loan program, import restrictions, and production allotments. The main purpose of the loan program is to maintain a minimum market price for U.S. producers. Processors use sugar as collateral for loans from the U.S. Department of Agriculture (USDA). The program permits processors to store sugar rather than sell it for lower than desired prices. Loans can be taken for up to nine months. Processors pay growers for delivered beets and cane, typically about 60% of the loan. Final payments are made and the loan is repaid after the sugar has been sold.

Under the FSRI Act, the sugar loan rate was set at \$0.18/lb for raw cane sugar and \$0.229/lb for refined beet sugar. However, loan rates were increased under the 2008 Farm Bill to \$0.1875/lb for raw cane sugar and \$0.2409/lb for refined beet sugar. Loans under the 2008 Farm Bill become recourse loans if the tariff rate quota (TRQ) is at 1.5 million metric tons or below, regardless of the price. When the TRQ is set above 1.5 million metric tons, the loans are nonrecourse. Under the nonrecourse loan, a processor can forfeit collateral (sugar) to the Commodity Credit Corporation (CCC) instead of loan repayment if market prices fall below the loan rates. Processors who obtain a nonrecourse loan must pay farmers an amount for their sugarbeets and sugarcane that is proportional to the loan value of sugar. This is the same as under previous legislation.

The Uruguay Round Agreement (URA) on agriculture made minor adjustments for sugar trade. U.S. import quotas on sugar were converted into TRQs, implying that a specified amount of sugar can be imported at the lower of two alternative duty rates. The amount of cane sugar subject to the lower duty rate increased from 1,117,195 metric tons to 1,231,497 metric tons for 2005 due to production losses from Hurricane Katrina. The minimum low-duty import of refined sugar is 22,000 metric tons. The minimum low-duty imports for raw and refined sugar add up to 1.256 million metric short tons raw value of sugar per year. The high duty (about \$0.15/lb) is imposed on the amount of sugar imported over the import quota. The first-tier duty ranges from zero to \$0.0625/lb.

The second tier-duty for raw cane sugar was reduced from \$0.1762/lb in 1995 to \$0.1582/lb in 2000 under the URA. The duty for refined sugar was reduced from \$0.186/lb in 1995 to \$0.1621/lb in 2000. The duties have remained constant since 2000. The sugar quota has been allocated among more than 40 quota-holding countries, allowing imports of specific quantities of sugar at first-tier duty rates. The quota allocation is based on historical exports to the United States for the 1975 to 1981 period.

NAFTA allowed a rapid reduction in the second-tier duty for Mexican sugar over the past several years. This implies that Mexico is in a unique position to increase its exports of sugar to the United States above the allocated quota. Mexico is replacing sugar with High Fructose Corn Sweetener (HFCS) in their beverages. Mexico gained unlimited duty-free access to the U.S. sugar market on January 1, 2009. In 2009 before conversion, Mexico consumed 5.1 million metric tons of sugar. In 2013, that dropped to 4.7 million metric tons of sugar. By 2014 sugar consumption in Mexico was 4.1 million metric tons. HFCS consumption increased from 653 thousand metric tons in 2009 to 1.2 million metric tons in 2014.

The United States signed a free trade agreement in 2005 with the Central American countries of El Salvador, Guatemala, Honduras, Nicaragua, Costa Rica and the Dominican Republic. Currently, Mexican exports of sugar into the United States are duty free. CAFTA allows 107,000 metric tons of additional sugar to be imported into the United States in the first year of implementation of the agreement, with additional increases of about 3,000 metric tons per year. This increase, however, does not have a significant impact on the price of U.S. sugar or world trade flows. 2005 trade negotiations with Australia did not include increased sugar imports.

### **Domestic and Export Subsidies in South Africa and Mexico**

South Africa has both internal price supports and export subsidies. South Africa reduced its subsidized exports by 200 thousand metric tons to 702 thousand metric tons although net exports for 2014 were only 480 thousand metric tons. Mexico also has subsidized exports and is subsidizing raw sugar storage.

## **Brazilian Production and Exports**

Brazil is the largest sugar producing country in the world. The production of sugar has increased 353% since 1990. About 54% of Brazilian sugar cane is converted into ethanol for fuel. The USDA does not record sugar cane that is converted into ethanol in the production and consumption data. The only source for that information is through the Global Agricultural Information Network (GAIN) of the USDA. Exports have risen from 1.2 million metric tons in 1990 to 24.0 million metric tons in 2014. Sugar that is converted into ethanol is subsidized at prices higher than the world price. Higher world oil prices during the 2000s increased the price of ethanol which in turn increased Brazil's conversion of sugar into ethanol, reducing potential sugar exports from Brazil. Brazil decreased its exports by 7.8% in 2011 which provided strength for sugar prices in 2011 but Brazil increased exports in 2012 and 2013 before lowering them in 2014.

## **Sugar Trade in Australia, China, and India**

Australian sugar exports were handled by the Queensland Sugar Corporation (QSC) until 2008 when it was dissolved and replaced by a public corporation, the Queensland Sugar Limited (QSL), established under the Sugar Industry Act 2008. The QSL is responsible for the domestic marketing and exports of 90% of the raw sugar produced in the state of Queensland, which produces 95% of the sugar produced in Australia. State trading enterprises (STEs) were not addressed in the URA. Other countries, including China and India, handle their sugar trade through STEs similar to the QSC.

## **GLOBAL ECONOMETRIC SUGAR SIMULATION MODEL**

The Global Econometric Sugar Simulation Model is used to analyze the United States and world sugar industries for the 2014-2024 period. The outlook projection assumes that current farm and trade policies adopted by sugar exporting and importing countries will remain unchanged. Assumptions associated with macroeconomic variables, such as GDP growth rates, interest rates, inflation rates, exchange rates, and consumer price indices in the United States and other countries, are based on projections obtained from the USDA website. Average weather conditions, historical rates of technological change, and current policies are also assumed to prevail during the projection period.

The model contains nine exporting countries and regions [Australia, Brazil, Columbia, Cuba, Guatemala, India, Mexico, South Africa, and Thailand] and 12 importing countries and regions [Algeria, Canada, China, Egypt, European Union, Former Soviet Union, Indonesia, Japan, Pakistan, South Korea, United States, and a Rest of the World region]. The model forecasts production, consumption, stocks, and exports or imports for sugar over a ten-year period. The model is solved for a set of equilibrium sugar prices in which demand for sugar equals supply for every year. The model used the predicted prices of all agricultural commodities, except sugar, from USDA. The model uses 2014 as the base year of the simulation.



## OUTLOOK FOR THE WORLD SUGAR INDUSTRY

Total world sugar trade is projected to increase by 8.3%, from 45.8 to 49.6 million metric tons over the 2014-2024 period. Most exporting countries will increase their sugar exports for the same period. Exports will increase 20.9% for Brazil, and 13.8% for Australia. Exports are also expected to increase for Cuba (24%), Mexico (31.6%), and Thailand (9.4%) during the same time period. World sugar price, referred to as the ICE No. 11 price of sugar, is projected to increase from \$0.17/lb in 2014 to \$0.22 in 2024 (Figure 6).

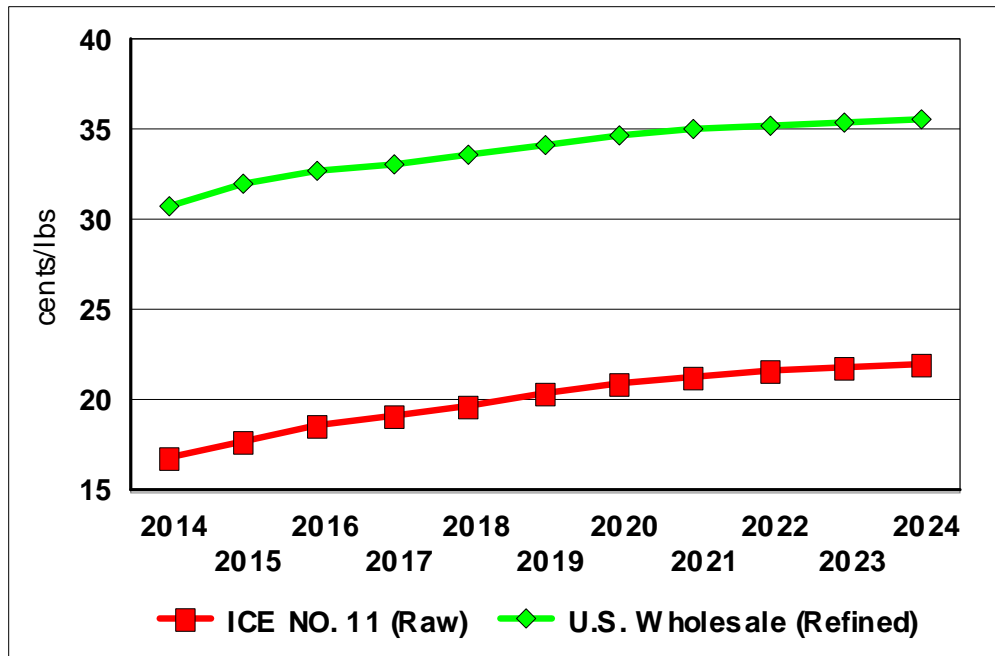


Figure 6. Estimated U.S. and World Sugar Prices

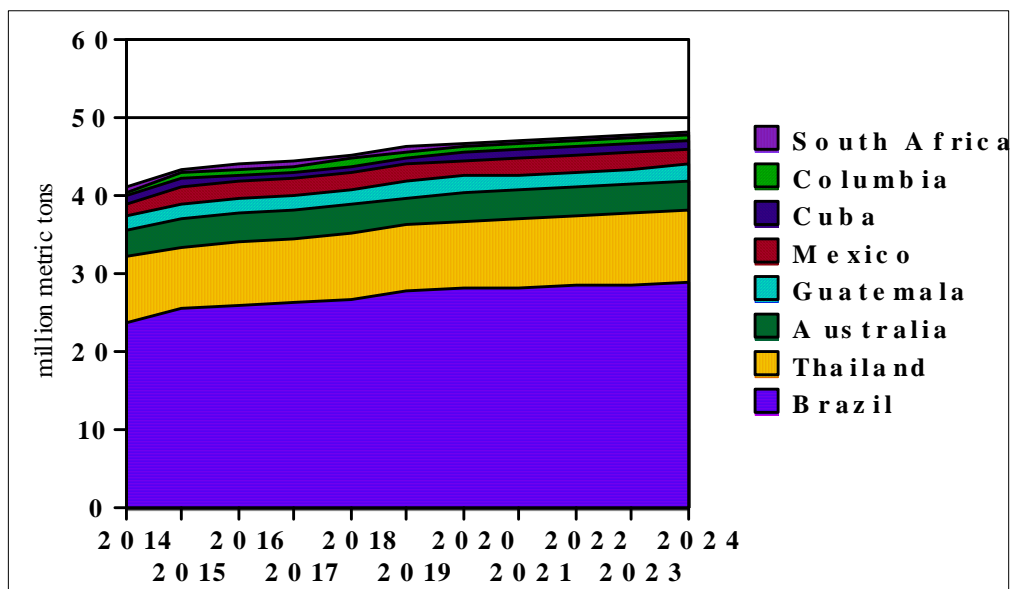


Figure 7. Projected World Sugar Exports by Country

## **United States**

Table 2 shows production, consumption, imports, and ending stocks of sugar for the United States. U.S. sugar production is predicted to increase to 8.6 million metric tons in 2024. The increase in sugar production is due mainly to an increase in both U.S. sugarbeet and sugar cane production. U.S. sugar consumption is predicted to increase by 12.2% from 10.7 million metric tons (the 2012-2014 average) to 12.0 million metric tons in 2024. Ending stocks are also expected to increase by 14.8% by 2024 (Table 2). Imports are predicted to be stable through the time period. However, the imports depend upon Mexico's sugar production and consumption and the continued conversion of Mexico's soft drink industry from sugar to HFCS.

**Table 2. U.S. Sugar Production, Consumption, Imports, and Carry-over Stocks, 2014-2024 Average**

	Average (2012-2014)	2014	2024	% Change (2012-14) to 2024
	-----1,000 metric tons-----			
Production	7,687	7,811	8,621	12.2
Beet	4,407	4,418	4,985	13.1
Cane	3,278	3,393	3,636	10.9
Net Imports	3,037	2,952	3,023	0.0
Consumption	10,664	10,880	11,969	12.2
Carry-over Stocks	1,629	1,512	1,870	14.8
Per capita Consumption (kg)	33	34	34	3.0

## **Exporters**

Figure 7 shows the projected sugar exports for the major exporting countries. Brazil is the largest sugar exporter followed by Thailand and Australia. Brazil's production is predicted to increase by 12.3% from 37.4 million metric tons in 2012-2014 to 42.0 million metric tons in 2024 (Table 3). Brazil's exports are predicted to increase from 26.3 million metric tons in 2012-2014 to 29.0 million metric tons in 2024. Its domestic consumption is predicted to increase by 14.5% from 11.3 million metric tons in 2012-2014 to 13.0 million metric tons in 2024.

Thailand's exports are predicted to increase by 22.9% from the 2012-2014 average of 7.6 million metric tons to 9.3 million metric tons in 2024 (Table 3). Consumption increases from 2.6 million metric tons for the 2012-2014 average to 2.7 million metric tons in 2024. Sugar production in the country is predicted to increase by 14.4% from 10.5 million metric tons to 12.0 million metric tons in 2024.

Australia's exports are predicted to increase by 21.3% from the 2012-2014 average to 3.7 million metric tons in 2024 (Table 3). Production is predicted to increase by 13.6% from 4.4 million metric tons to 5.0 million metric tons in 2024. Sugar consumption is expected to increase by 12.7% from 1.2 million metric tons to 1.4 million metric tons in 2024.

Cuba's exports are predicted to increase by 27.3% from the 2012-2014 level to 2024 (Table 3). It is predicted that Cuba will increase its sugar production by 15.3%, and consumption is predicted to increase by 4.1%. These projections are based on the assumption that the political situation remains the same between the United States and Cuba.

Mexico's production is predicted to increase by 3.8% from 6.8 million metric tons in 2012-2014 to 7.0 million metric tons in 2024. Mexico is expected to export 2.0 million metric tons by 2024, mainly to the United States under NAFTA. Sugar consumption is predicted to increase by 9.7% from 4.8 million metric tons in 2012-2014 to 5.3 million metric tons in 2024. Ending stocks are predicted to decrease by 16.6%.

Colombian exports are predicted to increase by 34.9% from the 2012-2014 average to 684 thousand metric tons in 2024 (Table 3). Production is predicted to increase by 14.1% from 2.2 million metric tons to 2.5 million metric tons in 2024 and sugar consumption is expected to increase by 6.2% from 1.7 million metric tons to 1.8 million metric tons in 2024.

Guatemala's exports are predicted to increase by 12.7% from the 2012-2014 average of 1.9 million metric tons (Table 3). Consumption increases from 764 thousand metric tons for the 2012-2014 average to 972 thousand metric tons in 2024. Sugar production in the country is predicted to increase by 11.7% from 2.8 million metric tons to 3.2 million metric tons in 2024.

South African sugar production is expected to return to normal levels after several years of smaller than normal crops. South Africa's production is predicted to increase by 8.3% to 2.4 million metric tons in 2024. South Africa's exports are predicted to increase 56.3% by 2024. Sugar consumption is predicted to increase by 2.5% and ending stocks are predicted to decrease by 6.0%.

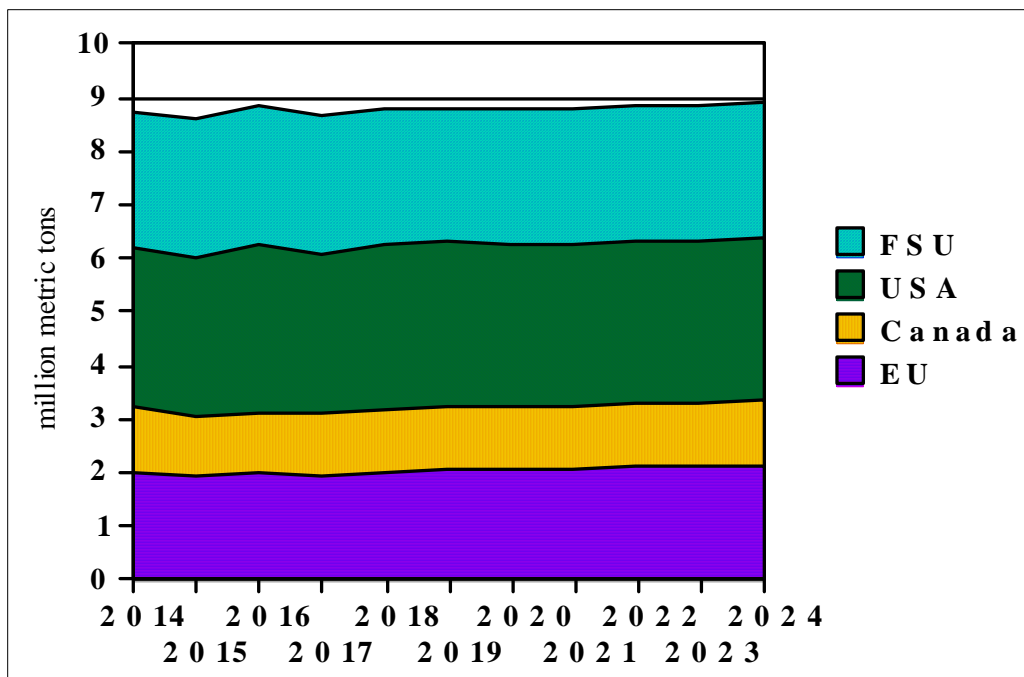
India's production is predicted to increase by 11.3% from 27.1 million metric tons in 2012-2014 to 30.1 million metric tons in 2024. India is expected to import a small amount of sugar by 2024. Sugar consumption is predicted to increase by 16.4% and ending stocks are predicted to decrease by 2.0%.

## **Importers**

Figures 8 through 10 show sugar imports by the major sugar importing countries. Sugar imports of selected Asian and African countries are expected to change by -2.3% and 23.6%, respectively, for the 2014-2024 period. Major Asian importers are Indonesia, Japan, South Korea, and China and major African importers are Algeria and Egypt.

Canada's production is predicted to increase from the 2012-2014 average of 108 thousand metric tons to 117 thousand tons by the year 2024, and consumption is predicted to increase from 1.2 million metric tons to 1.4 million metric tons in 2024 (Table 4). As a result, Canada's imports are predicted to increase by 9.7% from 1.1 million metric tons to 1.2 million metric tons in 2024.

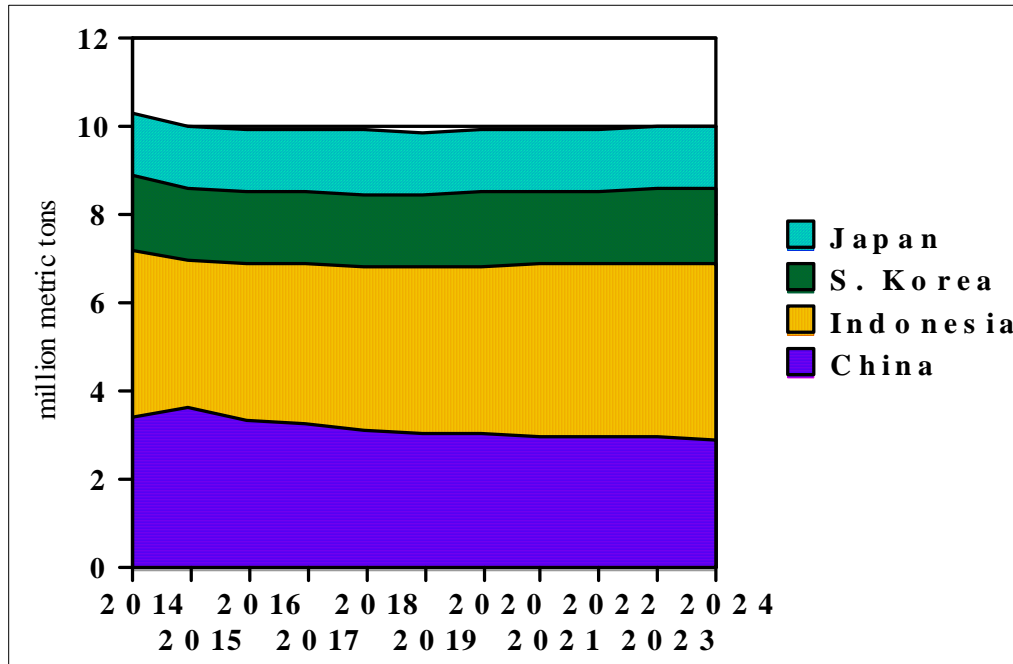
The EU has changed the internal sugar policy by reducing domestic sugar support. This has reduced production. Because of that change, the EU has become a net importer of sugar. EU imports are predicted to increase slightly from 2.0 million metric tons in 2012-2014 average to 2.1 million metric tons in 2024 (Figure 8). Sugar production in the EU is predicted to increase by 4.2% and consumption is predicted to increase from 18.4 million metric tons from the 2012-2014 average to 18.9 million tons in 2024 (Table 4). Most of the increase in consumption is due to an increase in income for the Eastern European countries recently included in the EU.



**Figure 8. Projected World Sugar Imports by Country, Major Importers**

**Table 3. Sugar Production, Consumption, Exports, and Carry-over Stocks in Exporting Countries**

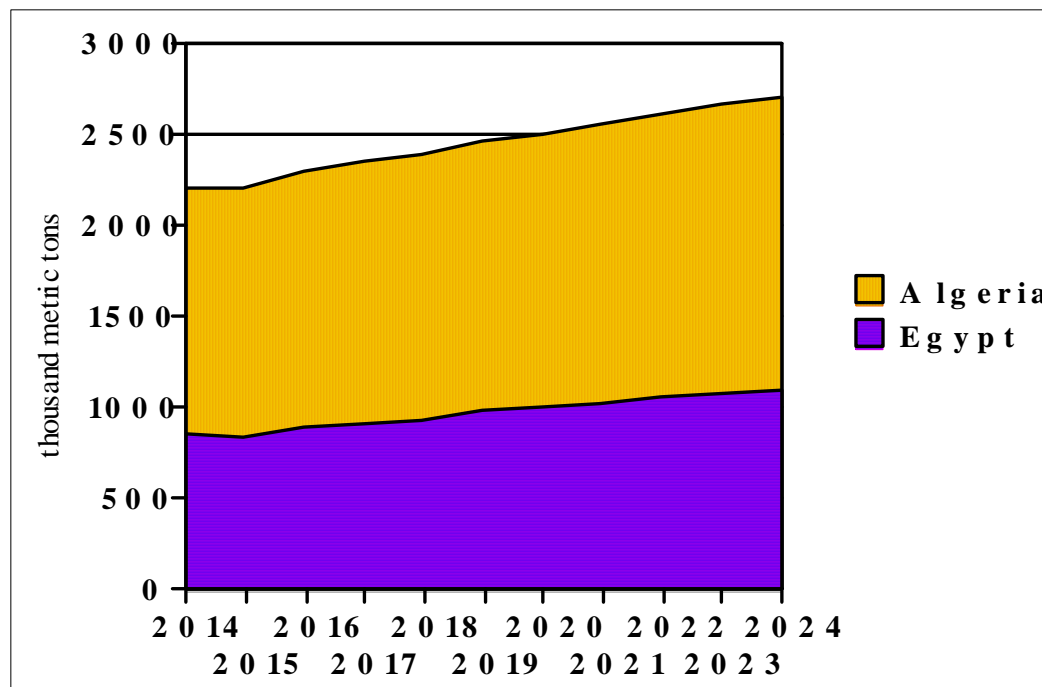
	Average (2012-2014)	2014	2024	% change (2012-14) to 2024
-----1,000 metric tons-----				
Brazil				
Production	37,400	35,800	41,980	12.3
Net Exports	26,300	24,000	29,028	10.4
Consumption	11,320	11,500	12,963	14.5
Carry-over	(338)	(195)	218	NA
Thailand				
Production	10,519	10,200	12,036	14.4
Net Exports	7,564	8,500	9,295	22.9
Consumption	2,608	2,700	2,732	4.7
Carry-over	4,105	3,889	3,944	-3.9
Australia				
Production	4,417	4,600	5,018	13.6
Net Exports	3,011	3,210	3,652	21.3
Consumption	1,212	1,208	1,365	12.7
Carry-over	68	55	61	-9.8
Cuba				
Production	1,587	1,650	1,829	15.3
Net Exports	821	850	1,058	27.3
Consumption	743	800	774	4.1
Carry-over	157	160	155	-1.1
Mexico				
Production	6,761	6,508	7,019	3.8
Net Exports	1,973	1,550	2,040	3.4
Consumption	4,804	4,860	5,268	9.7
Carry-over	1,136	979	947	-16.6
Columbia				
Production	2,193	2,300	2,503	14.1
Net Exports	507	650	684	34.9
Consumption	1,712	1,665	1,818	6.2
Carry-over	183	230	233	27.3
Guatemala				
Production	2,827	2,850	3,158	11.7
Net Exports	1,937	1,950	2,183	12.7
Consumption	764	768	972	27.3
Carry-over	501	635	649	29.7
India				
Production	27,064	27,250	30,120	11.3
Net Exports	862	500	(190)	NA
Consumption	26,000	27,000	30,265	16.4
Carry-over	8,386	7,768	8,217	-2.0
South Africa				
Production	2,218	2,200	2,403	8.3
Net Exports	296	480	462	56.3
Consumption	1,882	1,935	1,929	2.5
Carry-over	298	245	280	-6.0



**Figure 9. Projected World Sugar Imports by Country, Asian Countries**

The FSU's production is predicted to decrease by 1.1% from the 2012-2014 average of 7.1 million metric tons to 7.0 million metric tons in 2024, and consumption is predicted to increase by 4.0% from 9.2 million metric tons to 9.6 million metric tons for the same period. Imports are predicted to decrease by 14.4% from the 2012-2014 average (Table 4).

China is expected to decrease its imports by about 17.3% between 2012-2014 and 2024 (Table 4). China's production is predicted to increase by 7.4% from 13.9 million metric tons for the 2012-2014 average to 14.9 million metric tons in 2024, and consumption is predicted to increase by 9.1% from 16.3 million metric tons to 17.8 million metric tons for the period.



**Figure 10. Projected World Sugar Imports by Country, African Countries**

Japan's imports are predicted to increase by 4.8% from the 2012-2014 average of 1.4 million metric tons to 1.5 million metric tons in 2024, due to a slight decrease in domestic production (Table 4).

In South Korea, consumption is predicted to increase by 8.9% for the time period and its imports are predicted to increase by 7.8% for the period. There is no domestic production of either sugar cane or sugar beets in South Korea.

In Algeria, consumption is predicted to increase by 15.5% from 1.4 million metric tons in 2012-2014 to 1.6 million metric tons in 2024. The increase in consumption results in increasing imports from 1.4 million metric tons for the 2012-2014 average to 1.6 million metric tons in 2024.

Egypt's imports are predicted to increase by 39.9% from 0.8 million metric tons in 2012-2014 to 1.1 million metric tons in 2024, due mainly to increased consumption. Consumption is predicted to increase by 20.2% from 2.9 million metric tons to 3.5 million metric tons in 2024.

Indonesia's imports are predicted to increase by 4.3% from 3.8 million metric tons in 2012-2014 to 4.0 million metric tons in 2024. Consumption is predicted to increase from 5.7 million metric tons for the 2012-2014 average to 6.5 million metric tons in 2024.

**Table 4. Sugar Production, Consumption, Imports, and Carry-over Stocks in Importing Countries**

	Average (2012-14)	2014	2024	% change (2012-14) to 2024
-----1,000 metric tons-----				
Algeria				
Production	0	0	0	NA
Net Imports	1,406	1,350	1,610	14.5
Consumption	1,393	1,350	1,609	15.5
Carry-over	108	100	106	5.3
Canada				
Production	108	95	117	7.4
Net Imports	1,132	1,265	1,242	9.7
Consumption	1,231	1,330	1,357	10.2
Carry-over	263	280	274	4.1
China				
Production	13,855	13,300	14,889	7.4
Net Imports	3,573	3,455	2,956	-17.3
Consumption	16,333	17,400	17,820	9.1
Carry-over	8,037	8,487	8,288	3.1
Egypt				
Production	2,021	2,050	2,348	16.2
Net Imports	793	870	1,109	39.9
Consumption	2,873	2,910	3,454	20.2
Carry-over	164	171	188	14.6
European Union				
Production	16,047	16,025	16,726	4.2
Net Imports	1,993	2,000	2,143	7.5
Consumption	18,350	18,500	18,864	2.8
Carry-over	3,476	3,196	3,191	-8.2
Former Soviet Union				
Production	7,114	6,590	7,033	-1.1
Net Imports	2,949	2,488	2,526	-14.4
Consumption	9,186	9,198	9,557	4.0
Carry-over	1,497	1,242	1,212	-19.1
Indonesia				
Production	2,367	2,500	2,553	7.9
Net Imports	3,818	3,800	3,981	4.3
Consumption	5,667	5,900	6,535	15.3
Carry-over	1,469	1,964	1,781	21.9
Pakistan				
Production	4,938	4,660	5,462	10.6
Net Imports	(690)	(290)	(272)	-60.6
Consumption	4,450	4,500	5,183	16.5
Carry-over	880	846	883	0.7
Japan				
Production	757	750	668	-11.7
Net Imports	1,386	1,414	1,452	4.8
Consumption	2,130	2,164	2,120	-0.5
Carry-over	557	560	580	-1.2
Korea				
Production	0	0	0	NA
Net Imports	1,539	1,645	1,659	7.8
Consumption	1,521	1,625	1,657	8.9
Carry-over	496	510	538	8.5



## **CONCLUDING REMARKS**

This report provides an overview of the U.S. and world sugar markets for the 2014-2024 period using the Global Sugar Policy Simulation Model. The baseline projections are based on a series of assumptions about general economic conditions, agricultural policies, weather conditions, and technological change.

Total world sugar trade is projected to increase by 8.3% from 45.8 million metric tons in 2014 to 49.6 million metric tons in 2024. In early 2011, ICE No.11 sugar price increased to \$0.32/lb from a low of \$0.15/lb in early 2010. The price in early 2011 was about \$0.32/lb. The yearly average price for sugar in 2012 was \$0.22/lb. The price of world raw sugar decreased from \$0.18/lb in 2013 to \$0.17/lb in 2014. The price of world raw sugar is expected to increase slowly to \$0.22/lb in 2024. World sugar production decreased 1.5% in 2014 while consumption increased 2.2% in 2014.

World ending stocks in 2014 have increased 50.5% since 2009. In 2009 carryover stocks were at 28.0 million metric tons and at the end of 2014 stocks were 42.2 million metric tons.

Imports by most importing countries are predicted to increase from the 2012-14 average to 2024 although China's imports are predicted to decrease. Imports by Egypt and Algeria are predicted to increase by 39.9% and 14.5%, respectively.

U.S. sugar consumption is predicted to increase by 12.2% for the 2014-2024 period. Production is expected to increase by 11.8% for beet sugar and by 7.3% for cane sugar. Imports are not expected to change during the forecast period.

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